

**SELECTION OF ROUTING PATHS BASED UPON PATH QUALITY OF A  
WIRELESS MESH NETWORK**

**Abstract**

The invention includes an apparatus and method for determining an optimal route based upon path quality of routes to an access node of a wireless mesh network. The method includes receiving routing packets at the access node through at least one wireless route. Each routing packet including route information that identifies the wireless route of the routing packet. A success ratio of a number of successfully received routing packets versus a number of transmitted routing packets is determined over a period of time  $T_1$ , for each wireless route. The wireless route having a greatest success ratio is first selected, as are other wireless routes that have success ratios within a predetermined amount of the greatest success ratio. Of the first selected routes, routing packets are at the access node through the first selected routes. Again, each routing packet including route information that identifies the wireless route of the routing packet. A success long ratio of a number of successfully received routing packets versus a number of transmitted routing packets is determined over a period of time  $T_2$ , wherein  $T_2$  is substantially greater than  $T_1$ , for each first selected route. The wireless route having a greatest success long ratio are second selected, as are other wireless routes that have success long ratios within a second predetermined amount of the greatest success long ratio. The second selected routes having a greatest throughput are third selected. An optimal wireless route based upon the third selected routes is determined.